

REMARKS

This Application has been carefully reviewed in light of the Office Action mailed May 24, 2007. Claims 1-19 were pending in the Application. In the Office Action, Claims 1-19 were rejected. In order to expedite prosecution of this Application, Applicants amend Claims 1, 2, 10, 11, 16 and 17, and Applicants add new Claim 20. Thus, Claims 1-20 remain pending in the Application. Applicants respectfully request reconsideration and favorable action in this case.

In the Office Action, the following actions were taken or matters were raised:

SECTION 102 REJECTIONS

Claims 1, 2, 4-6, 10, 11, 13, 14, 16, 17 and 19 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,909,075 issued to Jakes et al. (hereinafter "Jakes"). Applicants respectfully traverse this rejection.

Of the rejected claims, Claims 1, 10, 16 and 19 are independent. Applicants respectfully submit that Claims 1, 10, 16 and 19 are each patentable over Jakes. For example, Jakes appears to disclose an apparatus for the heat treatment of raw materials having different crucibles 104 and 114 for holding raw materials before, during and after a melting of such raw materials (Jakes, abstract, column 5, lines 42-54). Jakes also appears to disclose that suitable materials for the crucibles 104 and 114 may comprise MoSi₂, ZrSiO₄, sintered alumina, cubic zirconia, and Cr₂O₃ (Jakes, column 5, lines 55-61). Thus, Jakes does not appear to disclose or even suggest a crucible for microwave sintering of parts comprised predominately of one or materials selected from silicon nitride and silicon nitride alloys as recited by Claim 1, for example. Therefore, for at least this reason, Applicants respectfully submit that Claim 1 is patentable over Jakes.

Independent Claim 10 recites "placing at least one part to be sintered into a container," and "subjecting the part to microwave radiation" where "the container is comprised predominately of one or more materials selected from the group of silicon nitride and alloys of silicon nitride" (emphasis added). Independent Claim 16 recites a "crucible for carrying green parts during microwave sintering comprised of one or more materials selected from the group of silicon nitride and silicon nitride alloys" (emphasis added). Therefore, for at least the reasons

discussed above in connection with independent Claim 1, Applicants respectfully submit that Claims 10 and 16 are also patentable over *Jakes*.

Jakes also appears to disclose that the crucibles 104 and 114 of *Jakes* remain in a fixed location within respective chambers 102 and 112 such that the raw materials are melted and flow from the crucible 104 in chamber 102 to the crucible 114 of chamber 114 (*Jakes*, column 3, lines 12-28, column 4, lines 50-67, column 5, lines 1-16 and 43-67, column 6, lines 1-11, and figure 1). Thus, *Jakes* does not appear to disclose or even suggest "a source of microwave radiation," "a chamber coupled to receive the microwave radiation, for sintering green parts" and "an elongated structure extending through the chamber for transporting containers carrying green parts through the chamber in a substantially continuous fashion" as recited by Claim 19, much less that the "structure" recited by Claim 19 is "comprised of one or more materials, at least one of which is a material having an ability to withstand thermal shock greater than that of alumina" (emphasis added). Therefore, for at least these reasons, Claim 19 is clearly patentable over *Jakes*.

Claims 2, 4-6, 11, 13, 14 and 17 depend respectively from independent Claims 1, 10 and 16 and therefore are also patentable over *Jakes* at least because they incorporate the limitations of respective Claims 1, 10 and 16 and also recite additional limitations that further distinguish *Jakes*. Accordingly, Applicants respectfully request that the rejections of Claims 1, 2, 4-6, 10, 11, 13, 14, 16, 17 and 19 be withdrawn.

SECTION 103 REJECTIONS

Claims 7-8 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication No. 2003/0175156 issued to Ford (hereinafter "*Ford*"). Claims 3, 9, 12 and 18 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Jakes* in view U.S. Patent No. 4,485,839 issued to Ward (hereinafter "*Ward*"). Applicants respectfully traverse these rejections.

Claims 3, 7-9, 12 and 18 depend respectively from independent Claims 1, 10 and 16. As indicated above, Claims 1, 10 and 16 are in condition for allowance. Therefore, for at least this reason, Claims 3, 7-9, 12 and 18 are also allowable.